

Cal/OSHA CONSULTATION SERVICE
RESEARCH & EDUCATION UNIT

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CONSULTATION & TRAINING BRANCH

It provides free on-site consultations for employers that identify workplace hazards, suggests corrective actions and evaluates and makes recommendations to improve an employer's safety and health management system to prevent future hazards. The public can call the Branch to inquire about safety and health standards and other related topics.

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ERGONOMIC SURVIVAL GUIDE FOR
**SHEET METAL
WORKERS**



What will happen to your family and your lifestyle if you get injured and can't work?
What will you lose if you get injured?

- **Your salary**
- **Your quality of life**
- **Your job advancement**
- **Future job opportunities**

**WHAT CAN YOU DO TO
AVOID AN INJURY?**

This SURVIVAL GUIDE is designed to promote awareness of safe work practices for SHEET METAL WORKERS.

It was made available by Cal/OSHA, California Dept. of Industrial Relations & modified by HIOSH, Hawaii Dept. of Labor & Industrial Relations, Phone: 808-586-9100.



What Can Make You Hurt?

There are certain things in your job that can lead to fatigue, discomfort, or pain when you do them **repeatedly or without breaks**.

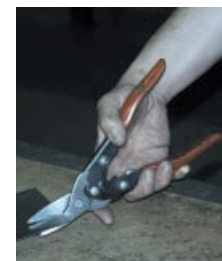
These include:

- Exerting force to perform a task or to use a tool.
- Working in positions such as bending, kneeling, stooping, twisting, and overhead reaching.
- Using awkward hand, wrist, elbow, or shoulder postures.
- Remaining in the same position for a long time with little or no movement.
- Continuous pressure from a hard surface or edge on any part of the body.
- Working in very hot or very cold temperatures produced by climate, equipment, or machines.
- Sitting on, standing on, or holding equipment or tools that vibrate.

In addition, stressful work situations can increase muscle tension and reduce awareness of proper work technique.

Most common injuries:

Back
Wrists and Hands
Knees
Neck and Shoulders



Prepare Yourself for Work

Just as a runner prepares for a race event by warming up, prepare for work by warming up and stretching. Warm up by walking, marching in place, or moving your arms in circles. Once your muscles are warm:

- Stretch S-L-O-W-L-Y and hold each stretch 3-5 seconds.
- Stretch a few minutes before and during your workday.

Caution: Check with your doctor before exercising. If you feel discomfort while exercising, stop immediately!

Stretch the low back and hips



Stretch each arm and shoulder



Stretch each leg



While you are off work, keep yourself physically ready for returning to work, whether it's the next day or later.

Lifting Tips

- Use teamwork and mechanical aids such as a cart whenever possible.

General lifting tips for heavy and light loads:

- Face the load and keep your waist straight.
- Bring the load close to your body.
- Breathe out and tighten your stomach as you lift.



3-Point Lift:

- Use a 3-point lift when handling heavy material by yourself. *If material is too heavy or awkward, get help and/or use mechanical aids to lift and transport materials.*



1. Squat



2. Tilt on end



3. Lift

**KEEP THE LOAD OR TOOL
CLOSE TO YOUR BODY**



Lifting, or carrying a **10-pound** object that is **25 inches** from your spine is equal to **250 pounds** of force on your lower back.



Lifting, or carrying a **10-pound** object that is **10 inches** from your spine is equal to **100 pounds** of force on your lower back.

Make It Easy on Yourself



SELECT THE RIGHT TOOL.

Choose tools that fit your hand comfortably. Whenever possible, use power tools or tools that require less force. Let your supervisor know if you need training on a new tool or process.



PRACTICE GOOD HOUSEKEEPING.

Pick up debris and scrap material to prevent slips, trips, and falls. Keep pathways clear for carts, wheelbarrows, and dollies.



CHANGE WORK POSITIONS.

Working overhead or in cramped spaces forces the body into awkward postures. To relieve muscle tension and improve circulation, change body positions, alternate tasks, and stretch throughout the day.



USE A MORE COMFORTABLE HANDLE.

When lifting a bucket, you will use less grip force if you increase the diameter of the handle by adding padding or by using a handle that has a bigger diameter.



Be Aware

If you experience symptoms, you must change the way you work or the tools you use. If you don't change, your symptoms may get worse and may keep you from working at all.

You may have a problem if you have any of these symptoms:

- Constant fatigue
- Cold hands
- Swelling
- Numbness
- Tingling
- Lack of energy
- Changes in skin color
- Weakness
- Loss of sensation
- Aching, burning, or shooting pain

Where?

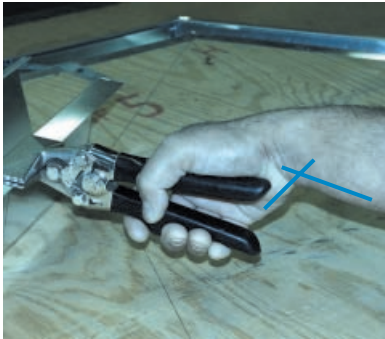
- Back
- Neck
- Shoulders
- Arms
- Hands
- Fingers
- Knees

If you develop any symptoms:

- Talk with your supervisor about your symptoms right away.
- Work with your supervisor to identify the cause of the problem.
- Follow your company's ergonomics program and its Injury and Illness Prevention Program.
- Always look for better ways to do your job.

A TYPICAL WAY

Bending your wrist when using a hand tool may cause hand fatigue. Over time, you could develop numbness or pain in your hand and fingers.



A SAFER WAY

Keep your wrist straight by using an angled tool or repositioning the material. When your wrist is straight, you have better grip strength, and your hand will not fatigue as easily.



Kneeling while working can cause awkward arm postures and put pressure on your knees. This work posture may cause pain and discomfort.



- Make your work easier by working in comfortable postures.
- Use existing equipment to create a stable “work bench” that allows you to stand upright while keeping your arms close to your side.
- Keep cutting tools sharp to reduce the force required.
- If you do a lot of cutting, use a power saw.

Working overhead and reaching out with a tool for long periods of time may lead to lower back, arm, shoulder, and neck injuries.



- Move closer and center yourself to the work area.
- If available, use a scissor lift or other work platform.
- Use lighter-weight tools.
- Wear a hard hat and eye protection.